

CLAIMS

1. A device for printing products with significant variations between them by means of a pad, in particular for confectionery, sugared almonds, chocolates and pharmaceutical tablets comprising at least one pad with a primary guide (25,..., 85) provided for the main movement of the pad (24, ..., 84), which provides for a movement function, characterized in that at least one secondary guide (26, ..., 86; 27, ..., 87) is provided as buffer element for buffering the differences in effective deposit depth between the individual products to be printed (23, ..., 83).
2. A device according to the preceding claim, characterized in that each said secondary buffer element is formed by elastic elements (26, ..., 86), preferably of the spring type, which are arranged substantially axially relative to the movement axis of the pad.
3. Device according to one of the preceding claims, characterized in that a piece holder is provided wherein the products to be printed can be taken up, wherein said piece holder is provided with apertures (53') provided therefore, wherein the products to be printed (23, ..., 53, ... 83) can be taken up, wherein the position and the orientation of the product relative to the printing unit can be brought in correspondence with the one which is necessary for printing the image at the appropriate position on the product.
4. A device according to one of the preceding claims, characterized in that said at least one pad (24) is solid.
5. A device according to one of the claims 1 to 3, characterized in that said at least one pad (34, 44) is hollow.
6. A device according to one of the preceding claims, characterized in that a set of multiple printing pads is provided for each primary guide in said device by means whereof various products can be printed simultaneously with the buffering action of said secondary buffer elements, (26,..., 86; 27,..., 87).
7. A device according to one of the preceding claims, characterized in that for each printing unit there is provided a set of primary and respectively

secondary elements, which are arranged by respective pairs, wherein said secondary elements (26, ..., 86; 27,..., 87) are each connected directly to a corresponding pad (24,..., 84) and which are disposed according to the movement axis thereof.

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8. A device according to one of the preceding claims, characterized in that it is integrated in an automatic or manual machine selectively.

9. A device according to one of the preceding claims, characterized in
10 that it is provided with printing means for printing products with various colors.

10. A device according to one of the preceding claims, characterized in that it is provided with printing means for printing products on various sides thereof.

15 11. A method for printing products with significant variations between them by means of a pad, in particular for confectionery, sugared almonds, chocolates and pharmaceutical tablets, more particularly by means of a device according to one of the preceding claims, wherein printing material is applied on a cliché according to a determined pattern, characterized in that the pad (24,...84) and the
20 cliché (21,...81) are brought in mutual contact (B) from a rest position (A) by means of a primary guide (25, ... 85), wherein the printing material is taken up by the pad of the cliché, and in that when taking up said printing material, the additional secondary guide (26,...86;27, ...87) buffers the contact between the pad and the cliché, after which the pad is moved in a deposit position (C), wherein the
25 image taken up by the pad is deposited on the product to be printed (23,...83), wherein said secondary guide elements buffer the contact between the pad and the products to be printed and after which said pad is moved back to its rest position (A).

30 12. A method for printing products with mutual significant variations, by means of a pad, in particular for confectionery, sugared almonds, chocolates and pharmaceutical tablets, possibly according to the preceding claim, more particularly by means of a device according to one of the preceding claims, wherein printing material is applied on a cliché according to a determined pattern,
35 characterized in that the parameters of the products to be printed are measured previously, such as in particular the dimensions of the products.

13. A method according to the preceding claim, characterized in that the printing parameters of the printing unit are adapted to the requirements on the basis of the measured parameters by means of a processing unit provided therefor, which establishes the link between the measured parameters and the related printing parameters for the printing unit.

14. A method according to one of the claims 12 or 13, characterized in that said product parameters are measured by means of an automated system on the basis of cameras provided therefor.

15. A method according to one of the claims 11 to 14, characterized in that the products are checked after printing by means of a control system provided therefor, wherein the printed product as such and/or the printing itself are checked.

16. A method according to one of the claims 11 to 15, characterized in that the taking up and deposit depth, and the shape and the effective hardness of the pad are set individually as parameters, wherein an optimum printing is carried out on an individual product basis.

17. A method according to one of the claims 11 to 16, characterized in that conditioning of the product to be printed in the environment is proposed, in particular the piece holder, with regard to conditioning parameters, such as temperature, pressure and humidity.

18. A method according to one of the claims 11 to 17, characterized in that conditioning of the substance to be printed, such as ink, chocolate, and the like is proposed with regard to the conditioning parameters of temperature, viscosity and color in order to keep the printing quality substantially constant.

19. A method according to one of the claims 11 to 18, characterized in that the printing of the product is carried out by means of a plurality of colors.

20. A method according to one of the claims 11 to 19, characterized in that the printing of the product is carried out on a plurality of sides.